

50 is performed by another computer program, provided in computer 36 or in a different computer or system of the aircraft. For example, step 50 may form part of a non-normal event detection system provided in an aircraft.

[0058] At step 52, reconfiguration information of the aircraft is acquired. In some embodiments, the performance limitation system 34 will retrieve the reconfiguration information upon detecting the non-normal event in step 50, from memory 38 or from another memory provided in the aircraft 10. Alternatively, the reconfiguration information will be received by the performance limitation system 34, either as part of the non-normal event information or separately therefrom. The reconfiguration information comprises at least one performance limitation of at least one aircraft or system parameter.

[0059] At step 56, a graphical indicator of the at least one performance limitation is displayed on a display of the aircraft. The graphical indicator of the at least one performance limitation may be displayed co-located and/or overlaid, with the at least one aircraft or system parameter to which it relates. The graphical indicator may correspond to a prescription of a checklist generated as a result of the non-normal event.

[0060] In some embodiments, an optional step 54 is provided in method 48 for adapting a display of the performance limitation parameter using one or more context-specific condition(s). For example, a context-specific condition may include an operating condition of the aircraft, such as altitude for example, or the flight phase of the aircraft, such as taxi, takeoff, cruise, descent, final approach, landing, and the like. Indeed, the performance limitation system 34 may dynamically modify the manner in which the indicator of the performance limitation parameter is presented as a function of the flight phase or operating condition. For example, when the performance limitation relates to a maximum altitude of the aircraft, the graphical display of the performance limitation can be modified dynamically as a function of a current altitude of the aircraft. Another example of a context-specific condition is an actual performance and/or operating condition of the aircraft. For example, altitude may be considered when displaying a maximum speed performance limitation. For example, at altitude A, the performance limitation might be to operate below speed X, and at altitude B, the performance limitation might be to operate below a speed Y. The display of the indicator of the given performance limitation can be adjusted automatically and dynamically based on the actual operating condition of the aircraft, thereby avoiding pilot memory about when the performance limitation changes. In other words, the performance limitation for a given parameter might be different depending on the operating conditions or flight phase of the aircraft.

[0061] The context-specific condition may be used to determine whether the limitation parameter is critical and/or applicable to a current situation of the aircraft or to a possible future situation of the aircraft. In the case of a current situation, the indicator may be made more prominent or visually imposing than for a possible future situation. The indicator may also be provided a different color and/or size depending on the context-specific condition. In some embodiments, the indicator may be provided as a dynamic indicator instead of a static indicator, by flashing or otherwise changing its graphic presentation. Audio may be included with the indicator, such as a buzzing or ringing

sound, when the limitation parameter is applied to a parameter relevant to a current situation of the aircraft. Other embodiments may also apply to bring the presence of the indicator to the attention of the flight crew in a critical situation. Note that a distinction may be made between a critical limitation and an applicable limitation. In the case of a critical limitation, the indicator may be displayed in a very prominent manner, whereas in the case of an applicable situation that is not critical, the indicator may be displayed in a less prominent manner.

[0062] The limitation parameter system 34 may be configured to retrieve the context-specific condition from a memory, such as memory 38 or another memory provided within the aircraft 10. Retrieval may be triggered upon receipt of the reconfiguration information and/or the non-normal event information. The system 34 may also, in some embodiments, receive the context-specific condition as part of the non-normal event information and/or the reconfiguration information, or separately therefrom.

[0063] Also optionally, the method 48 may further adapt or change the display of the performance limitation parameter when the context-specific condition changes, as illustrated in FIG. 4. For example, if the flight phase or operating conditions change and the aircraft or system parameter to which the limitation parameter is applied becomes relevant to operation of the aircraft and/or critical, then display of the indicator may change from a low-key or moderate-type display to an attention-drawing or visually imposing display. Similarly, if the speed of the aircraft increases to within a predetermined threshold of the limitation parameter, the display of the indicator may be adapted accordingly in order to further draw the attention of the flight crew.

[0064] FIG. 5 is an example of display device 14 displaying part of a PFD. An airspeed indicator 58 shows current airspeed 60 to be 260 knots. Airspeed performance limitation indicator 62 is overlaid on top of the airspeed indicator 58 to display a limitation parameter relating to airspeed. In this example, the indicator 62 informs the pilot that the aircraft speed should not be increased beyond 280 knots. A threshold 64 may be set at 270 knots. When the aircraft airspeed reaches the threshold 64, the indicator 62 may be modified in size, color, format, and/or state (i.e. dynamic), and an audio component may be added. When the aircraft speed decreases sufficiently such that it falls below the threshold 64, the indicator 62 may be further modified to return to the presentation shown in FIG. 5.

[0065] While indicator 62 is shown to overlay the primary display of the aircraft speed, i.e. the airspeed indicator, it may also be provided adjacent to or in the vicinity of the aircraft speed, such that the indicator of the limitation parameter and the corresponding aircraft or system parameter are co-located, and the relationship between the indicator 62 and the airspeed indicator 58 would be understood by the crew.

[0066] Also displayed in FIG. 5 is an altimeter 66 which shows current aircraft altitude 68 to be 35,500 ft. Altitude performance limitation indicator 70 is overlaid on the altimeter 66 to display a limitation relating to altitude. In this example, the indicator 70 informs the pilot that the aircraft altitude should not be increased beyond 35 900 ft. The values used herein are for illustrative purposes only.

[0067] The airspeed performance limitation indicator 62 and altitude performance limitation indicator 70 are illustrated as bars that span from a lower limit value upwards on